

Everyone's Smart University

Project (Spring 2021)

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Project Risk Management

Instructions:

- اخر موعد للتسليم هو يوم السبت 08-05-2021 في تمام الساعة 9 مساءً.
- الإجابة متاحة باللغة الإنجليزية أو اللغة العربية مع مراعاة أن تكون المصطلحات العلمية باللغة الانجليزية.
- يتم تسليم المشروع في صيغة ملف pdf مع الالتزام نموذج الجامعة ولن تقبل أي مستندات أخرى.
- يجب مراعاة أقسام البحث الرئيسية (مقدمة Introduction، دراسات علمية سابقة Literature Review، طريقة البحث Methodology، النتائج والمناقشة Results and Discussion، وأخيراً المراجع References. وإن كان هناك ملحقات Appendices يتم إضافتها)
- يجب الالتزام بـ Theme موحد كما يلي:
- حجم الخط 12.
- نوع الخط Arial.
- لون الخط أسود.
- المسافة بين الأسطر 1.5 line spacing
- عدد صفحات البحث (لا يقل عن ثلاث صفحات ولا يزيد عن ست صفحات).

Instructor's Name: Eng. Mosaab M. Hamed

PROJECT RISKS IN MONITORING PROGRESS

I. Introduction

Project monitoring has a broader scope of processes as discussed in advanced project management; monitoring happens all steps of the way as the project goes through until it is finished.

Project monitoring without identifying potential risk and proper management could lead to mischance and eventually failure. It could be the least understood in the project but the most effective tool to achieve project success. When risk management is implemented correctly, project risk management will increase success probability, alleviates anxiety, and offers a higher degree of predictability.

Project risk management has become the organization's backbone to successfully deliver projects and highly essential to the project's success.

With this, we will identify potential risk, prioritize, and develop risk response, control risks in our project on monitoring progress in advanced project management.

II. Literature Review and Conceptual Framework

A. What is a Risk?

A risk is an uncertain event that, if it occurred, affects at least one project objective. The first and most important to note is that a risk is an event that has not happened but could happen in the future. When we are talking about risk, we are talking about the future.

B. The difference between an issue and a risk

A risk is an event that has not happened yet and most likely will happen in the future.

An issue is an event that is already happened. The main differences are related to timing and probability.

The appropriate level of risk management helps improve the probability for project success and keeps the schedule and cost variance close to zero and the SPI (schedule performance index) and CPI (cost performance index) close to one. This also helps manage stress for the team and improve its credibility about project management.

Taking project risk lightly could ruin the project. Therefore, It is crucial to pay attention to project risks, identify them, analyze them, develop response plans and monitor them.

III. Methodology

The 6 Step Process of Project Risk Management



The process starts with developing the risk plan, identifying the risk, performing qualitative analysis, performing quantitative analysis, planning risk responses, and monitoring, and controlling risk.

1. Develop Risk Management Plan (Probability Impact Matrix)

This is the tailored process that is created to be followed in the whole project. The probability impact matrix is created, and risk thresholds are decided to be used in the later steps to identify risk and prioritize.

Impact	Probability			
		High	Medium	Low
	High	H	H	M
	Medium	H	M	L
	Low	M	L	L

2. Identifying Risk

This is a crucial activity, and the project manager, including the rest of the team, must know the project. The most effective way to identify risk is a collaboration with effective communication. List all the potential risks.

3. Perform Qualitative Analysis

Out of the listed potential risk, this time, we will analyze them. We were performing the root cause analysis, determining the probability of occurrence for the risk event and estimating the impact if the event occurred.

4. Perform Quantitative Analysis

The quantitative analysis provides comprehensive management on handling the probability and impact of the risk. The three primary types are.

- a. Sensitivity analysis: which determines the risk that has the most potential in the project.
- b. Expected monetary value analysis or EMV: used to calculate the average outcome of risk by multiplying probability with impact for each risk and summing them up ($EMV = \sum (\text{probability} \times \text{impact})$). Opportunities produce positive values, and threats produce negative values.
- c. Modeling and Simulation interprets risk into the potential impact on project outcomes.

5. Developing Risk Response Plans (Risk Response Strategy)

Strategies for Negative Risks or Threats		Strategies for Positive Risks or Opportunities	
Avoid	Eliminate the probability of risk event to happen (probability = 0 or 0%)	Exploit	Ensure that the risk event happens (probability = 1 or 100%)
Mitigate	Either reduce the probability or impact of both for the risk event	Enhance	Either increase the probability or impact of both for the risk event
Transfer	Transfer the negative impact of the risk event to someone else e.g. buying insurance	Share	Share positive impact of the risk event e.g. sub-contracting to meet exceptional demand
Accept – When none of the above strategies are possible, accept the risk and deal with it when it happens. An active acceptance strategy will seek for contingency risk reserve to deal with the impact when the risk occurs. The contingency could be for time/schedule or cost or both			

6. Monitor and Control Risks

This process is performed during project execution. Monitoring the project and the potential risk is necessary, and we can only do it with effective communication.

IV. Results and Discussion

Project monitoring without identifying potential risk and proper management could lead to mischance and eventually failure. It could be the least understood in the project but the most effective tool to achieve project success. When risk management is implemented correctly, project risk management will increase success probability, alleviates anxiety, and offers a higher degree of predictability.

Risk management in monitoring advanced project management is achieved only if the project exercises effective communication.

V. References

1. <https://www.projectpractical.com/10-best-practices-for-effective-project-monitoring-and-control/> Effective project monitoring
2. <https://2020projectmanagement.com/resources/communication-management/communication-the-key-to-successful-project-management>
3. Kwak, Y. H., & Stoddard, J. (2004). Project risk management: Lessons learned from the software development environment. *Technovation*, 24(11), 915–920

VI. Appendix A: Risk Register during Monitoring and Control Process

Id	Risk Description	Probability		Impact (Delays in days)	EMV (P*I) (Days)
		(%)	L/M/H		
Project A Risk Register (Partial) - Mar 2011		Total EMV (delay in days) = 43			
1	Delays in completing the Data Model	40%	M	15	6
2	Impact is very large because of new data model	10%	L	10	1
3	Sharing of tables gets minimized to keep the impact low	30%	M	10	3
4	Data migration is not final until end of Nov 11	50%	M	15	7.5
5	Conversion of Group1 programs gets delayed	50%	M	15	7.5
6	Batch Cycle becomes longer	40%	M	5	2
7	Project X - taking the resources away from this project	80%	H	15	12
8	Other new product - Taking resources away	80%	M	5	4
Project A Risk Register (Partial) - May 2011		Total EMV (delay in days) = 46.5			
1	Delays in completing the Data Model	30%	L	10	3
2	Impact is very large because of new data model	10%	L	10	1
3	Sharing of tables gets minimized to keep the impact low	20%	L	5	1
4	Data migration is not final until end of Nov 11	50%	M	15	7.5
5	Conversion of G1 programs gets delayed	80%	M	15	9
6	Batch Cycle becomes longer	40%	M	5	2
7	Project X - taking the resources away from this project	80%	H	15	12
8	Project Y Implementation of Base Layer gets delayed	10%	L	10	1
9	Datawarehouse can't handle new data by end of Dec 11	50%	M	20	10
10	Other new product - Taking resources away	80%	M	5	4
Project A Risk Register (Partial) - Jul 2011		Total EMV (delay in days) = 33			
1	Delays in completing the Data Model	0%		10	0
2	Impact is very large because of new data model	0%		10	0
3	Sharing of tables gets minimized to keep the impact low	0%		5	0
4	Data migration is not final until end of Nov 11	30%	L	10	3
5	Conversion of G1 programs gets delayed	50%	M	10	5
6	Batch Cycle becomes longer	40%	M	5	2
7	Project X - taking the resources away from this project	80%	H	15	12
8	Project Y Implementation of Base Layer gets delayed	10%	L	10	1
9	Datawarehouse can't handle new data by end of Dec 11	50%	M	20	10
10	Other new product - Taking resources away	80%	M	5	4
Project A Risk Register (Partial) - Sep 2011		Total EMV (delay in days) = 25.1			
1	Delays in completing the Data Model	0%		0	0
2	Impact is very large because of new data model	0%		0	0
3	Sharing of tables gets minimized to keep the impact low	0%		0	0
4	Data migration is not final until end of Nov 11	5%	L	2	0.1
5	Conversion of G1 programs gets delayed	15%	L	10	1.5
6	Batch Cycle becomes longer	30%	L	15	4.5
7	Project X - taking the resources away from this project	50%	H	10	5
8	Project Y Implementation of Base Layer gets delayed	10%	L	10	1
9	Datawarehouse can't handle new data by end of Dec 11	50%	M	20	10
10	Other new product - Taking resources away	30%	L	10	3
Project A Risk Register (Partial) - Dec 2011		Total EMV (delay in days) = 22.5			
1	Delays in completing the Data Model	0%		0	0
2	Auto Impact is very large because of new data model	0%		0	0
3	Sharing of tables gets minimized to keep the auto impact low	0%		0	0
4	Data migration is not final until end of Nov 11	0%		2	0
5	Conversion of G1programs gets delayed	0%		10	0
6	Batch Cycle becomes longer	30%	L	15	4.5
7	Project X - taking the resources away from this project	0%		0	0
8	Project Y Implementation of Base Layer gets delayed	0%		0	0
9	Datawarehouse can't handle new data by end of Dec 11	50%	M	20	10
10	Other new product - Taking resources away	30%	L	10	3
11	Legacy System Changes not completed by end of Dec 11	50%	M	10	5
Project A Risk Register (Partial) - Feb 2012		Total EMV (delay in days) = 3			
1	Delays in completing the Data Model	0%		0	0
2	Auto Impact is very large because of new data model	0%		0	0
3	Sharing of tables gets minimized to keep the auto impact low	0%		0	0
4	Data migration is not final until end of Nov 11	0%		2	0
5	Conversion of G1programs gets delayed	0%		10	0
6	Batch Cycle becomes longer	10%	L	5	0.5
7	Project X - taking the resources away from this project	0%		0	0
8	Project Y Implementation of Base Layer gets delayed	0%		0	0
9	Datawarehouse can't handle new data by end of Jan 12	0%		10	0
10	Other new product - Taking resources away	0%		10	0
11	Legacy System Changes not completed by end of Jan 12	25%	M	10	2.5
12	Issues with coordination just after the code freeze is lifted	0%		5	0
13	Datawarehouse cycle becomes longer	20%	L	1	0.2